Patent Claims

5   1.   A method for assisting the driver of a vehicle
during a parking maneuver, wherein a parking gap is
sensed and measured from the vehicle and a setpoint
trajectory (5) along which the vehicle is to be moved
during the parking maneuver is determined in accordance
10   with a predefined parking strategy, characterized in
that a parking situation image on which the parking gap
(7), an optimum setpoint position (4) as well as a
first vehicle (1) and a second vehicle (2) are
represented in a plan view is displayed to the driver
15   on an image display device, wherein the optimum
setpoint position (4) corresponds to a position which
the vehicle is intended to adopt within the parking gap
(7), the first vehicle (1) corresponds to the vehicle
in its instantaneous position and the second vehicle
20   (2) corresponds to the vehicle in a target position (2)
which the vehicle is expected to adopt when it is moved
along the setpoint trajectory (5).

2.   The method as claimed in claim 1, characterized in
25   that the setpoint trajectory (5) is determined as a
function of the initial steering angle.

3.   The method as claimed in claim 1 or 2,
characterized in that the setpoint trajectory (5) is
30   determined in such a way that it has a first section
which starts at a starting point (5a) and can be
traveled through with a constant steering angle and
whose profile is predefined by the steering angle which
is set at the starting point (5a).

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4.   The method as claimed in claim 3, characterized in
that the setpoint trajectory (5) is determined in such
a way that a second section which can be traveled

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through with a constant steering angle adjoins the first section.

5. The method as claimed in one of the preceding claims, characterized in that the setpoint trajectory (5) is represented on the parking situation image.

6. The method as claimed in one of the preceding claims, characterized in that the parking gap (7) is determined and measured while the vehicles traveling past it, and in that the driver is requested to move back if he has traveled past the starting point of the setpoint trajectory.

7. The method as claimed in claim 6, characterized in that the vehicle is automatically stopped if it has reached the starting position (5a).

8. The method as claimed in one of the preceding claims, characterized in that when the vehicle is stationary the driver is requested to turn the steering wheel.

9. The method as claimed in claim 8, characterized in that the driver is requested to move the second vehicle (2) shown in the parking situation image into the optimum setpoint position (4) by turning the steering wheel.

10. The method as claimed in claim 8 or 9, characterized in that the direction of rotation of the steering wheel is indicated to the driver in a visual and/or acoustic and/or haptic fashion.

11. The method as claimed in one of the preceding claims, characterized in that feedback is output to the driver if the second vehicle (2) has reached the optimum setpoint position (4).

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12. The method as claimed in claim 11, characterized
in that the feedback is given by changing the color of
an image element which represents the second vehicle
(2).

13. The method as claimed in one of the preceding
claims, characterized in that the driver is requested
to drive off with the steering wheel held in position
if the second vehicle (2) is in the optimum setpoint
position (4).

14. The method as claimed in one of the preceding
claims, characterized in that the parking situation
image is removed from the display when the vehicle is
driven off.

15. The method as claimed in claim 7, characterized in
that the parking situation image is displayed when the
vehicle is stopped or braked.

16. The method as claimed in one of the preceding
claims, characterized in that the vehicle is
automatically stopped if the end (5b, 5c) of a section
of the setpoint trajectory (5) which can be traveled
through with a constant steering angle is reached
during the execution of the parking maneuver.

17. The method as claimed in one of the preceding
claims, characterized in that the position of the
vehicle during the execution of the parking maneuver is
determined and in that the vehicle is automatically
stopped if it leaves a tolerance range defined around
the setpoint trajectory (5).

18. The method as claimed in claim 17, characterized
in that a departure from the tolerance range (8) is

indicated to the driver in a visual and/or acoustic and/or haptic fashion.

19. The method as claimed in one of the preceding claims, characterized in that the setpoint trajectory (5) is newly calculated if the vehicle is stopped during the execution of the parking maneuver.

20. The method as claimed in one of the preceding claims, characterized in that the driver is informed whether it is necessary to maneuver the vehicle in order to reach the final parking position.

21. The method as claimed in one of the preceding claims, characterized in that the speed of the vehicle during the execution of the parking maneuver is limited to a value range lying below a predefined maximum value.

22. A device for assisting the driver of a vehicle during a parking maneuver, having surroundings-sensing means for sensing and measuring a parking gap in the surroundings of the vehicle, having evaluation means for determining a setpoint trajectory (5) along which the vehicle is to be moved during the parking maneuver, having information means for informing the driver about the driver actions necessary to execute the parking maneuver, and having position sensing means for determining the position of the vehicle, characterized in that the information means comprise an image display device for displaying a parking situation image on which the parking gap (7), an optimum setpoint position (4) which can be reached by the vehicle within the parking gap (7), the setpoint trajectory (5) as well as a first vehicle (1) corresponding to the vehicle in its instantaneous position and a second vehicle (2) corresponding to the vehicle in a target position which

it is expected to reach can be represented in a plan
view.